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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/566,043

Applicant(s)

MATSUI ET AL.

Examiner

STEPHEN A. BRAY

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 26 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date 1/26/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5-7, 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hagiwara et al (US 2001/0048422).

Regarding claim 1, *Hagiwara et al* discloses a user interface system comprising:

a directional input unit having an operating member, and operable to receive at a point in time an input specifying one of at least three different directions, in response to a user operation of touching the operating member (Figure 3 discloses a directional operating unit 3 with a support shaft 3c which acts as the operating member and is able to receive an input specifying one of three different directions.);

a calculating unit operable to calculate an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Paragraph [0044] discloses calculating an amount of change from a first direction to a second direction by measuring a change in resistance using a first detection unit to determine if the user is trying to select a different character than the one initially chosen. The Examiner defines a predetermined period of time to be any period of time, from 5 seconds to 5 minutes to whenever operation body 3a is pushed downward to select a character.);

a judging unit operable to judge whether the calculated amount of change falls within a predetermined range (Paragraph [0038] discloses that each character disposed on operation unit 3 is disposed in an angular region α defined by $\alpha = 360/26 = 13.8^\circ$. Therefore if the operation unit 3 is directly in the center of the angular region α for the initially selected character, the operation unit 3 must move at least 6.9° in either direction to change from the initially selected character to the next or previous character.); and

a processing unit operable to perform a first process associated with each of the first and second directions when the judging unit judges negatively, and perform a second process associated with the amount of change when the judging unit judges affirmatively (Paragraph [0044] discloses that when the operation unit 3 is not moved at least 6.9° in either direction, the initial character is still displayed on display unit 11. When operation unit 3 is moved at least 6.9° in either direction, the initially selected character is changed to a different next character or a different previous character based on how far operation unit 3 is moved.).

Regarding claim 2, *Hagiwara et al* discloses the user interface system according to Claim 1, wherein

when the input specifying the first direction is followed within the predetermined time period by two or more inputs specifying directions different from the first direction, the calculating unit calculates the amount of change from the first to second directions which are specified respectively by the inputs received first and last within the predetermined time period (Paragraphs [0043] - [0044] disclose that when operation

unit 3 is rotated from a first direction to a second direction, the resistance value generated is changed and the angular amount of change by the operation unit is determined based on the last position of operation unit 3 when operation body 3a is pushed downward. The Examiner defines a predetermined period of time to be any period of time, from 5 seconds to 5 minutes to whenever operation body 3a is pushed downward to select a character.).

Regarding claim 5, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a determining unit operable to determine, when the judging unit judges affirmatively and a process most recently performed is a first process, a second process as a candidate process to be performed (Paragraph [0044] discloses that if operation unit 3 is rotated from a first direction to a second direction, then the character data being displayed is changed.); and

a counting unit operable to keep count of how many times the determination is made (Figure 5 discloses that operation unit 3 is connected to a control unit 15, which acts based on input from the operation unit 3. The Examiner considers that when operation body 3a is pushed down, the control unit sends a signal to the display unit 11 to display the selected character data, wherein the control unit acts as a counting unit with a value equal to 1.), wherein

when the determination count reaches a predetermined number, the processing unit performs second processes associated with the respective amounts of angular change having been calculated for making the determination (Paragraphs [0043] -

[0044] disclose that when operation unit 3 is rotated from a first direction to a second direction, the resistance value generated is changed and the angular amount of change by the operation unit is determined based on the last position of operation unit 3 when operation body 3a is pushed downward. The Examiner defines a predetermined number as being equal to 1.).

Regarding claim 6, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a determining unit operable to determine, when the judging unit judges negatively and when a process most recently performed is a second process, a first process as a candidate process to be performed (Paragraph [0044] and [0038] disclose that when operation unit 3 is kept in the same position, then the character data is displayed without being changed.); and

a counting unit operable to keep count of how many times the determination is made (Figure 5 discloses that operation unit 3 is connected to a control unit 15, which acts based on input from the operation unit 3. The Examiner considers that when operation body 3a is pushed down, the control unit sends a signal to the display unit 11 to display the selected character data, wherein the control unit acts as a counting unit with a value equal to 1.), wherein

when the determination count reaches a predetermined number, the processing unit performs first processes associated with the respective directions having been received for making the determination (Paragraphs [0043] - [0044] disclose that when operation unit 3 is kept in the same position, the selected character is output when

operation body 3a is pushed downward. The Examiner defines a predetermined number as being equal to 1.).

Regarding claim 7, *Hagiwara et al* discloses the user interface system according to claim 1, wherein

when the input specifying the first direction is followed within the predetermined time period by no input specifying another direction, the processing unit performs a first process associated with the first direction (Paragraph [0044] and Figure 4a disclose that when operation body 3a is inclined to select the character "G" and operation body 3a is pushed down, character "G is selected. The Examiner defines a predetermined period of time to be any period of time, from 5 seconds to 5 minutes to whenever operation body 3a is pushed downward to select a character.).

Regarding claim 18, *Hagiwara et al* discloses a program for use by a computer having an operating member and a directional input unit that is operable to receive at a point in time an input specifying one of at least three directions (Figure 3 discloses a directional operating unit 3 with a support shaft 3c which acts as the operating member and is able to receive an input specifying one of three different directions.), the program comprising code operable to cause the computer to perform:

a calculating step of calculating an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Paragraph [0044] discloses calculating an amount of change from a first

direction to a second direction by measuring a change in resistance using a first detection unit to determine if the user is trying to select a different character than the one initially chosen. The Examiner defines a predetermined period of time to be any period of time, from 5 seconds to 5 minutes to whenever operation body 3a is pushed downward to select a character.);

a judging step of judging whether the calculated amount of change falls within a predetermined range (Paragraph [0038] discloses that each character disposed on operation unit 3 is disposed in an angular region α defined by $\alpha = 360/26 = 13.8^\circ$. Therefore if the operation unit 3 is directly in the center of the angular region α for the initially selected character, the operation unit 3 must move at least 6.9° in either direction to change from the initially selected character to the next or previous character.); and

a step of performing a first process associated with each of the first and second directions when the judging unit judges negatively, and performing a second process associated with the amount of change when the judging unit judges affirmatively (Paragraph [0044] and Figure 4a disclose that when operation body 3a is inclined to select the character "G" and operation body 3a is pushed down, character "G" is selected. Paragraphs [0043] - [0044] disclose that when operation unit 3 is rotated from a first direction to a second direction, the resistance value generated is changed and the angular amount of change by the operation unit is determined based on the last position of operation unit 3 when operation body 3a is pushed downward. A new character other than "G" is displayed based on the amount of angular change performed by the user.).

Regarding claim 19, *Hagiwara et al* discloses a computer-readable medium storing a program for use by a computer having an operating member and a directional input unit that is operable to receive at a point in time an input specifying one of at least three directions (Figure 3 discloses a directional operating unit 3 with a support shaft 3c which acts as the operating member and is able to receive an input specifying one of three different directions.), the program comprising code operable to cause the computer to perform:

a calculating step of calculating an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Paragraph [0044] discloses calculating an amount of change from a first direction to a second direction by measuring a change in resistance using a first detection unit to determine if the user is trying to select a different character than the one initially chosen. The Examiner defines a predetermined period of time to be any period of time, from 5 seconds to 5 minutes to whenever operation body 3a is pushed downward to select a character.);

a judging step of judging whether the calculated amount of change falls within a predetermined range (Paragraph [0038] discloses that each character disposed on operation unit 3 is disposed in an angular region α defined by $\alpha = 360/26 = 13.8^\circ$. Therefore if the operation unit 3 is directly in the center of the angular region α for the initially selected character, the operation unit 3 must move at least 6.9° in either

direction to change from the initially selected character to the next or previous character.); and

a step of performing a first process associated with each of the first and second directions when the judging unit judges negatively, and performing a second process associated with the amount of change when the judging unit judges affirmatively (Paragraph [0044] and Figure 4a disclose that when operation body 3a is inclined to select the character "G" and operation body 3a is pushed down, character "G" is selected. Paragraphs [0043] - [0044] disclose that when operation unit 3 is rotated from a first direction to a second direction, the resistance value generated is changed and the angular amount of change by the operation unit is determined based on the last position of operation unit 3 when operation body 3a is pushed downward. A new character other than "G" is displayed based on the amount of angular change performed by the user.).

Claim Rejections - 35 USC § 103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of (Trent, Jr. et al (US 7,466,307).

Regarding claim 3, *Hagiwara et al* discloses the user interface system according to claim 1.

Hagiwara et al fails to teach wherein one of the directions available for an input to the operating member is a reference direction and each of the directions is expressed by an angle formed with the reference direction, and

the calculating unit calculates an amount of angular change from a first angle expressing the first direction to a second angle expressing the second direction, when the directional input unit receives the input specifying the first direction followed within the predetermined time period by the input specifying the second direction.

Trent, Jr. et al discloses wherein one of the directions available for an input to the operating member is a reference direction and each of the directions is expressed by an angle formed with the reference direction (Figure 44 and Column 19, lines 10-40 disclose that each position is calculated with respect to a reference direction.), and

the calculating unit calculates an amount of angular change from a first angle expressing the first direction to a second angle expressing the second direction, when the directional input unit receives the input specifying the first direction followed within

the predetermined time period by the input specifying the second direction (Figure 44 and Column 19, lines 10-40 discloses determining the amount of angular change from the first direction to the second direction by subtracting the first position from the second position.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Trent, Jr. et al* in order to form an input apparatus in which angular motion on the input apparatus can be determined with greater ease.

Regarding claim 4, *Hagiwara et al* as modified above discloses the user interface system according to claim 3, wherein

each of the directions available for an input to the operating member is expressed by 360° with respect to the reference direction at 0° , and the predetermined range is $10^\circ < \text{amount of angular change} < 160^\circ$ (Paragraph [0038] of *Hagiwara et al* discloses that each character disposed on operation unit 3 is disposed in an angular region α defined by $\alpha = 360/26 = 13.8^\circ$. Figure 44 and Column 19, lines 10-40 of *Trent, Jr. et al* discloses determining the direction of angular input by assuming that the user cannot travel more than 180° within the predetermined time period. Therefore *Hagiwara et al* and *Trent, Jr. et al* in combination teach the predetermined range listed above.).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Hagiwara et al* (US 2001/0048422) in view of *Inoue et al* (US 2003/0085793).

Regarding claim 8, *Hagiwara et al* discloses the user interface system according to claim 1.

Hagiwara et al fails to teach wherein the directional input unit includes:

a resistive layer formed on an insulating substrate;

a conducting member formed on a planar substrate facing the resistive layer across a predetermined insulating gap; and

the operating member used to bring the resistive layer partially into contact with the conducting member, wherein

in response to a user operation of touching the operating member under a condition where a predetermined voltage is applied to the resistive layer, the insulating substrate and the planar substrate are brought partially into contact, so that an input specifying a direction is received based on a voltage conducted as a result of the partial contact.

Inoue et al discloses wherein the directional input unit includes:

a resistive layer formed on an insulating substrate (Paragraph [0056] discloses that resistive layer 18 is printed on a flexible insulating substrate 16.);

a conducting member formed on a planar substrate facing the resistive layer across a predetermined insulating gap (Paragraph [0056] discloses that conducting layers 22 and 23 are disposed on printed circuit substrate 13 and separated from resistive layer 18 by insulating spacers 16B.); and

the operating member used to bring the resistive layer partially into contact with the conducting member (Figures 4-5 and Paragraph [0056] disclose that knob 14 is

used to bring the resistive layer 18 into contact with conductive layers 22 and 23.), wherein

in response to a user operation of touching the operating member under a condition where a predetermined voltage is applied to the resistive layer, the insulating substrate and the planar substrate are brought partially into contact, so that an input specifying a direction is received based on a voltage conducted as a result of the partial contact (Paragraph [059] – [0060] discloses that a predetermined DC voltage is applied to the resistive layer 18. When resistive layer 18 is brought into contact with conductive layers 22 and 23, an output voltage VI is generated that specifies where on the input unit the touch has occurred.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Inoue et al* in order to form an input apparatus which can be made smaller without compromising the resolution of the input apparatus.

7. Claims 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of Nguyen (US 7,036,091).

Regarding claim 9, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with the options, and the second table associating the individual amounts of change with movement directions and amounts of the

selected position (Figure 5 discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that an option associated with each direction input to the directional input unit is focused or selected (Paragraph [0038] and [0044] discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the selected position is moved in a movement direction and amount associated with the calculated amount of change (Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

Hagiwara et al fails to teach a display unit operable to display (i) a group of options in an annular array, and (ii) a selected position movable to any of the options to indicate that the option is currently focused or selected; and

Nguyen discloses a display unit operable to display (i) a group of options in an annular array, and (ii) a selected position movable to any of the options to indicate that the option is currently focused or selected (Figure 4 shows a display 104 with a group of

options 424 and an indicator 428 which indicates which option is currently selected.); and

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Nguyen* in order to form an input apparatus in which all the characters available for selection are displayed upon the display device.

Regarding claim 11, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a display unit operable to display an image of a dial on which a group of letters are arranged in an annular array selected (Figure 4 of *Nguyen* shows a display 104 with a group of options 424 and an indicator 428 which indicates which option is currently selected. Paragraph [0045] of *Hagiwara et al* discloses that a plurality of characters can be displayed before and after the selected character on display unit 11.); and

a storage unit operable to store a table associating the individual amounts of change with rotational directions and amounts of the dial (Figure 5 of *Hagiwara et al* discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.), wherein

when the judging unit judges negatively, the processing unit performs the first process, so that each input to the directional input unit is discarded and causes no text

input (Paragraph [0038] and [0044] of *Hagiwara et al* discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the table to accordingly perform the second process, so that the dial is rotated in a rotational direction and amount associated with the calculated amount of change and that text of a letter placed at a predetermined position as a result of the rotation is input (Paragraph [0044] of *Hagiwara et al* discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Hagiwara et al* (US 2001/0048422) in view of *Duarte* (US 2003/0043206).

Regarding claim 10, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with the files, and the second table associating the individual amounts of change with movement directions and amounts of a selected one of the files (Figure 5 discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on

the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that a file associated with each direction input to the directional input unit is selected (Paragraph [0038] and [0044] discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a currently selected file is moved in a movement direction and amount associated with the calculated amount of change and placed into a folder if the selected file is moved to where the folder is located change (Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

Hagiwara et al fails to teach a display unit operable to display a plurality of files and folders in an annular array; and

Duarte discloses a display unit operable to display a plurality of files and folders in an annular array (Figure 1 discloses arranging a plurality of files and folders in an annular array.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with

the teachings of *Duarte* in order to form an input apparatus in which it is easier to view all of the options available for selection.

9. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of Robbin et al (US 2003/0095096).

Regarding claim 12, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with processes to be performed, and the second table associating the individual amounts of change with levels of audio output of content targeted for playback (Figure 5 discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process associated with each direction input to the directional input unit (Paragraph [0038] and [0044] discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the content is played

with audio output at a level associated with the calculated amount of change (Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

Hagiwara et al fails to teach a playback unit operable to play content with audio; and

the second table associating the individual amounts of change with levels of audio output of content targeted for playback.

Robbin et al discloses a playback unit operable to play content with audio (Figure 1B discloses a media player 100.); and

the second table associating the individual amounts of change with levels of audio output of content targeted for playback (Paragraph [0051] discloses that rotational movement can be used to make a volume adjustment.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Robbin et al* in order to form an input apparatus which realizes a greater ease of use of computing devices.

Regarding claim 13, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a playback unit operable to play content (Figure 1B of *Robbin et al* discloses a media player 100.); and

a storage unit operable to store a first table and a second table, the first table associating the individual directions with processes to be performed, and the second

table associating the individual amounts of change with speeds at which content targeted for playback is fast-forwarded or rewound (Figure 5 of *Hagiwara et al* discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] of *Hagiwara et al* discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] of *Hagiwara et al* discloses that each individual direction without any movement is associated with a first operation. Paragraph [0037] of *Robbin et al* discloses that media player 100 contains buttons for fast-forwarding and re-winding.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process associated with each direction input to the directional input unit (Paragraph [0038] and [0044] of *Hagiwara et al* discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the content is fast-forwarded or rewound at a speed associated with the calculated amount of change (Paragraph [0044] of *Hagiwara et al* discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

10. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of Yamaguchi et al (US 6,710,771).

Regarding claim 14, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with movement directions of the selected position, and the second table associating the individual amounts of change with scaling factors by which a displayed part of the chart is scaled up or down with the selected position as a center (Figure 5 discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that the selected position is moved in a movement direction associated with each direction input to the directional input unit (Paragraph [0038] and [0044] discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a displayed part of the chart is scaled up or down by a scaling factor associated with the calculated amount of

change (Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

Hagiwara et al fails to teach a display unit operable to display (i) a chart composed of options in an array and (ii) a selected position movable to any of the options to indicate the option is currently focused or selected.

Yamaguchi et al discloses a display unit operable to display (i) a chart composed of options in an array and (ii) a selected position movable to any of the options to indicate the option is currently focused or selected (Figure 27 discloses having a chart full of options displayed on a display and means to select one of the options.); and

and the second table associating the individual amounts of change with scaling factors by which a displayed part of the chart is scaled up or down with the selected position as a center (Figure 27 discloses having a window 90 which discloses that by using a circular input unit, the user can zoom in or zoom out on the selected chart.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Yamaguchi et al* in order to form an input apparatus which can perform desired processing operation in a rapid manner.

Regarding claim 15, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a display unit operable to display a map and a cursor (Figure 28 of *Yamaguchi et al* discloses having a display with a map.); and

a storage unit operable to store a first table and a second table, the first table associating the individual directions with movement directions of the cursor on the map, and the second table associating the individual amounts of change with scaling factors by which a displayed part of the map is scaled up or down with the cursor as a center (Figure 5 of *Hagiwara et al* discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] of *Hagiwara et al* discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] of *Hagiwara et al* discloses that each individual direction without any movement is associated with a first operation. Figure 28 of *Yamaguchi et al* discloses that changes in the scaling factors is associated with a circular input movement.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that the cursor is moved in a movement direction associated with each direction input to the directional input unit (Paragraph [0038] and [0044] of *Hagiwara et al* discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a displayed part of the map is scaled up or down by a scaling factor associated with the calculated amount of change (Paragraph [0044] of *Hagiwara et al* discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of

angular movement that occurred. Figure 28 of *Yamaguchi et al* discloses that a circular motion input is used to zoom in or out of displayed map.).

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of SanGiovanni (US 2002/0101441).

Regarding claim 16, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with the currently displayed options, and the second table associating the individual amounts of change with numbers by which a ranking range of the currently displayed options are to be shifted (Figure 5 discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to perform the first process, so that an option associated with each direction input to the directional input unit is focused or selected (Paragraph [0038] and [0044] discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to perform the second process, so that another group of options is displayed, said another group including consecutive options within a ranking range shifted from the current ranking range by a number associated with the calculated amount of change (Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

Hagiwara et al fails to teach a managing unit operable to rank and manage a plurality of options;

a display unit operable to display a group of options in a spiral array, the group including a predetermined number of options of consecutive ranks out of the plurality of options managed by the managing unit.

SanGiovanni discloses a managing unit operable to rank and manage a plurality of options (Figure 7A and paragraph [0070] discloses rotating the information elements as shown in step 732 according to the user's preference.);

a display unit operable to display a group of options in a spiral array, the group including a predetermined number of options of consecutive ranks out of the plurality of options managed by the managing unit (Figure 5 discloses showing a plurality of options in a spiral array.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with

the teachings of *SanGiovanni* in order to form an input apparatus which can be used to control a computer with only one hand.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of Goldenburg et al (US 6,636,197).

Regarding claim 17, *Hagiwara et al* discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with sounds, and the second table associating the individual amounts of change with scratch sounds (Figure 5 discloses that operating unit 15 is connected to a control unit 15, which is connected to a memory 16. Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction, a second operation is performed based on the amount of movement. Paragraph [0038] discloses that each individual direction without any movement is associated with a first operation.); and

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first processes, so that the output unit produces a sound associated with each direction input to the directional input unit (Paragraph [0038] and [0044] discloses that when operation unit 3 is not rotated in the horizontal direction and operation body 3a is pushed down, the first action is performed.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the output unit

produces a scratch sound associated with the calculated amount of change (Paragraph [0044] discloses that when operation unit 3 is rotated in the horizontal direction a second action is performed based on the amount of angular movement that occurred.).

Hagiwara et al fails to teach a display unit operable to display an image of a vinyl record;

an output unit operable to produce audio output, wherein

Goldenburg et al discloses a display unit operable to display an image of a vinyl record (Column 4, lines 21-39 discloses that the controlled device can be used to control video games. Column 4, lines 47-50 discloses that a display 14 is coupled to control panel 12.);

an output unit operable to produce audio output (Column 6, lines 23-31 discloses that control 12 can be used to adjust the volume. Therefore the control device would also have access to an audio output device.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Goldenburg et al* in order to form an input apparatus with force feedback which helps to reduce user error.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN A. BRAY whose telephone number is

(571)270-7124. The examiner can normally be reached on Monday - Friday, 9:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AMR AWAD can be reached on (571)272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN A BRAY/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

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